TEAC

SERVICE MANUAL

CR-H220

CD Receiver

COMPACT disc DIGITAL AUDIO

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NOTES

- PC boards shown are viewed from parts side.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- ⚠ Parts marked with this sign are safety critical components. They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Parts of [ ] mark can be used only with the version designated.
  [E(N)]:EUROPE (Gold Version) [E(S)]:EUROPE (Silver Version) [UK]:U.K.

Effective : October, 2004

S-0129A

1 SPECIFICATIONS

AMPLIFIER Section

Output Power ..... 25 W/ch (6 ohms, 0.5 %,1 kHz)
Input Sensitivity ..... 300 mV/47k ohms
Frequency Response ..... 20 Hz to 60,000 Hz (+1/-3 dB)

TUNER Section

FM Section

Frequency Range ..... 87.50 MHz to 108.00 MHz (50 kHz steps)
Signal-to-Noise Ratio ..... 65 dB (Mono)
60 dB (Stereo)

AM Section

Frequency Range ..... 522 kHz to 1629 kHz (9 kHz steps)
Signal-to-Noise Ratio ..... 35 dB

CD PLAYER Section

Frequency Response ..... 20 Hz to 20,000 Hz (±2 dB)
Signal-to-Noise Ratio ..... more than 85 dB
Wow and Flutter ..... Unmeasurable

GENERAL

Power Requirements ..... 230 V AC, 50 Hz
Power Consumption ..... 75 W
(standby) ..... 1.5 W

Dimension (W x H x D) ..... 215 x 110 x 359 mm
Weight ..... 4.4 kg

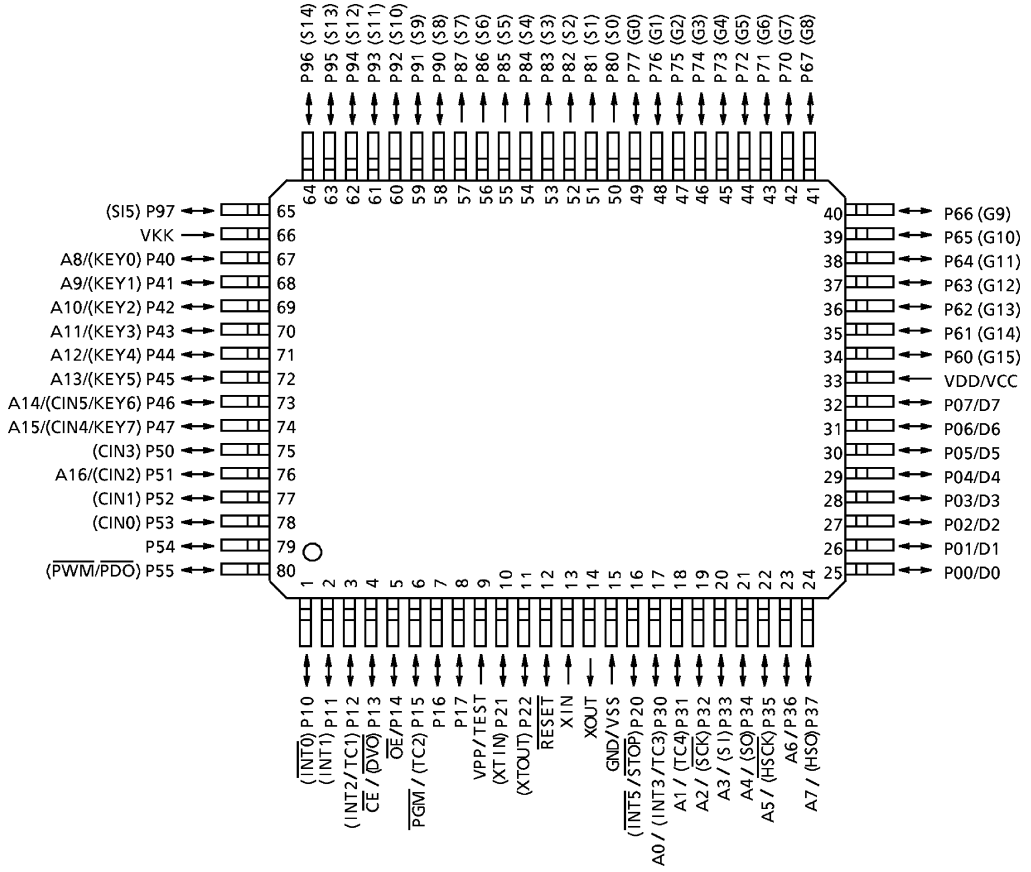
Standard Accessories

Remote Control Unit (RC-959) x 1
Batteries (AA, R6, SUM-3) x 2
AM Loop Antenna x 1
FM Lead-type Antenna x 1
Owner's Manual x 1
Warranty Card x 1

- Design and specifications are subject to change without notice.
- Weight and dimensions are approximate.

2 MICROCOMPUTER PIN FUNCTIONS

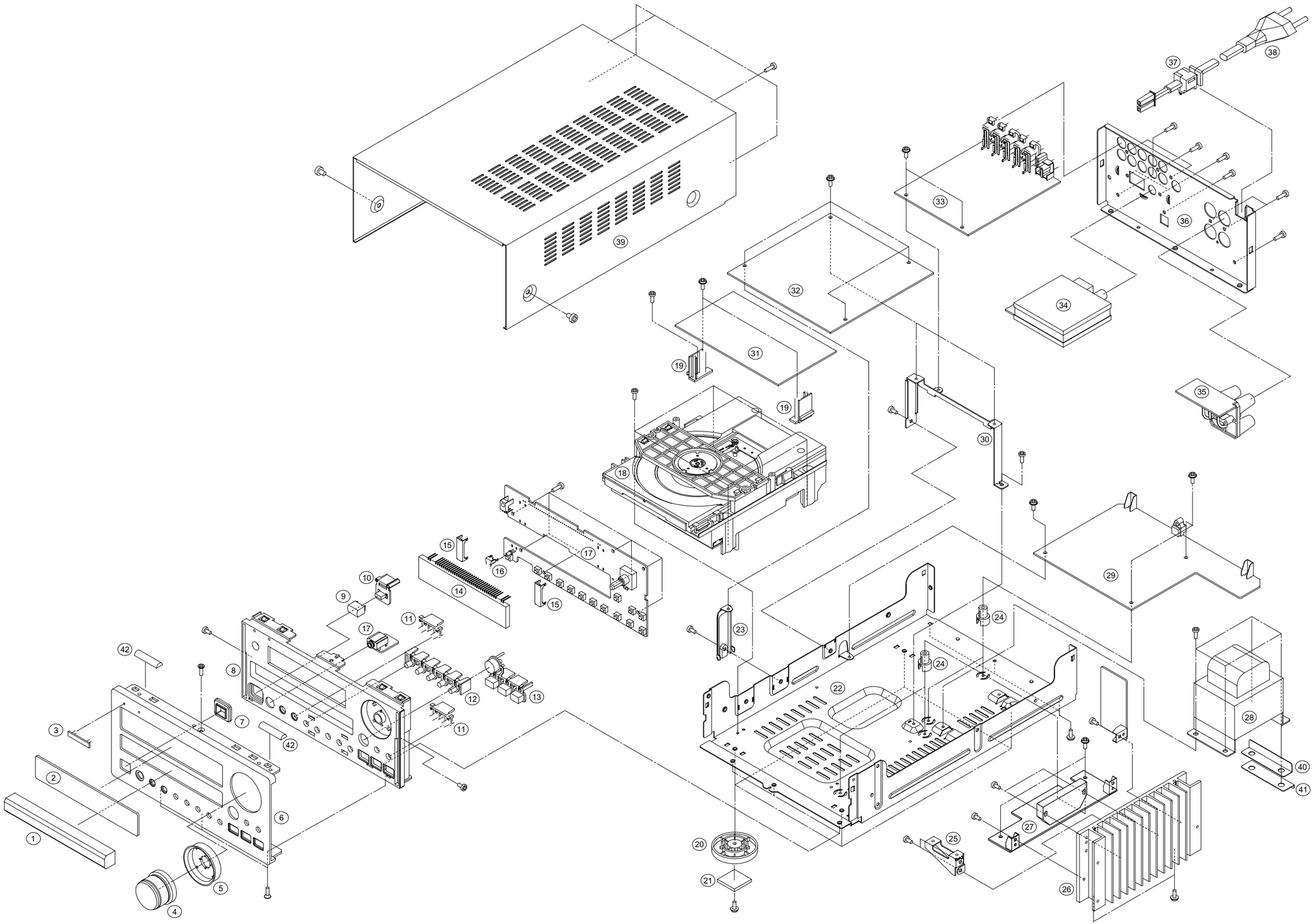
TMP87PS71AF



PIN No.	NAME	I/O	DESCRIPTION
1	F_MUTE	O	Function Mute Control port (Active "H")
2	REMOTE	I	Remote Data input port
3	RDS_CLK	I	RDS Clock input port
4	RDS_DATA	I	RDS Data input port
5	TAPE(H)	O	TAPE Control port (Active "H")
6	AUX2(H)	O	AUX2 Control port (Active "H")
7	N.C	-	No Connection
8	CD_STBY	O	CD_STANDBY On Control port
9	GND	-	GND
10	JOG2	I	JOG Data Input port(Master Volume)
11	JOG1	I	
12	RESET	I	Reset port
13	X IN	-	8MHz Crystal Connection port
14	X OUT	-	
15	GND	-	GND
16	BACK_UP	I	BACKUP mode control port

PIN No.	NAME	I/O	DESCRIPTION
17	CD_BUS0	I/O	CD_BUS Interface port
18	CD_BUS1	I/O	
19	CD_BUS2	I/O	
20	CD_BUS3	I/O	
21	CD_OPEN_SW	I	CD Open Switch input port
22	CD_CLOSE_SW	I	CD Close Switch input port
23	CD_LIMIT_SW	I	CD Limit Switch input port
24	TUNED_IN	I	Tuner Module Tuned port
25	STEREO_IN	I	Tuner Module Stereo port
26	N.C	-	No Connection
27	POWER_H	O	Power on port
28	PLL_DIN	I	PLL data input port
29	V-STB	O	Volume I.C(IC21) Chip enable port
30	P/V_CLK	O	PLL/VOLUME Colck output port
31	P/V_DATA	O	PLL/VOLUME Data output port
32	PLL_CE	O	PLL Chip enable port
33	VDD	I	Power Supply port
34~65	FIP_DATA	O	FIP Data output port
66	-30V	I	-30V Supply port
67	OPTION	I	option port
68	PROTECT	I	Protect Control port (Active "L")
69	H/P_IN	I	Headphone input control port
70	CD_POWER	O	CD Power control port
71	CD_RESET	O	CD Reset output port
72	CD_BUCK	O	CD DSP IC Clock port
73	CD_CCE	O	CD DSP IC Chip enable port (Active "L")
74	CD_RW	O	CD Control Interface
75	CD_OPEN_M	O	Open Motor control port
76	CD_CLOSE_M	O	Close Motor control port
77	KEY2	I	KEY Data input port
78	KEY1	I	
79	SP_ON	O	Speaker On Control port
80	T_MUTE	O	Tuner Mute Control port

3 EXPLODED VIEWS AND PARTS LIST



EXPLODED VIEW LIST

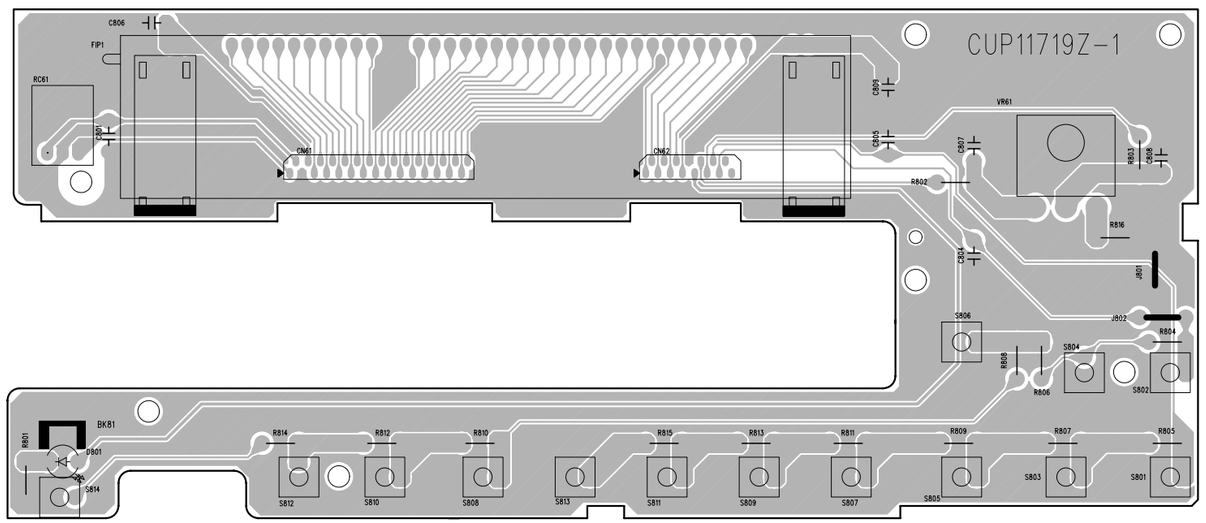
REF.NO.		PARTS NO.	DESCRIPTION	REMARKS
1		CGR1A345M9ZK79	ORNAMENT,DOOR [E(N)]	
		CGR1A345M7ZG5	ORNAMENT,DOOR [E(S),UK]	
2		CGU1A347Z	WINDOW,FIP	
3		KGB1A047	BADGE,TEAC [E(N)]	
		KGB1A047Z	BADGE,TEAC [E(S),UK]	
4		CGK1A098ZA	VOLUME KNOB ASSY [E(N)]	
		CGK1A098YA	VOLUME KNOB ASSY [E(S),UK]	
5		CGR1A346MBC13	ORNAMENT,RING [E(N)]	
		CGR1A346MBC22	ORNAMENT,RING [E(S),UK]	
6		CKM1A144ZC11	PANEL,FRONT [E(N)]	
		CKM1A144ZC35	PANEL,FRONT [E(S),UK]	
7		CGL1A133	INDICATOR,STAND BY	
8		CGW1A386R5K80	PANEL,SUB [E(N)]	
		CGW1A386M7ZG5	PANEL,SUB [E(S),UK]	
9		CBT1A495M9K79	CAP,STAND BY [E(N)]	
		CBT1A495M7G5	CAP,STAND BY [E(S),UK]	
10		CBT1A483	KNOB,STAND BY	
11		CBT1A493MBC13	KNOB,CPS [E(N)]	
		CBT1A493MBC22	KNOB,CPS [E(S),UK]	
12		CBT1A942M9K79	KNOB,MODE [E(N)]	
		CBT1A942M7G5	KNOB,MODE [E(S),UK]	
13		CBT1A943M9ZK79	KNOB,PLAY [E(N)]	
		CBT1A943M7ZG5	KNOB,PLAY [E(S),UK]	
14		HFLHNA11SM28	FIP	
15		CMD1A468	BRACKET,FLT	
16		CMD1A376	SUPPORT,LED	
17		COP11719B	PCB,MAIN ASSY [E(N)]	
		COP11719C	PCB,MAIN ASSY [E(S),UK]	
18		CJDKSL2130CCM	CD SINGLE MECH	
19		KMH1A092	SUPPORT,PCB	
20		CKL2A055M9K63	FOOT [E(N)]	
		CKL2A055H45	FOOT [E(S),UK]	
21		KHG1A050Y	CUSHION,FOOT	
22		CUA1A248	CHASSIS,BOTTOM	
23		CMD1A395	BRACKET,PCB	
24		CHE1A030	HOLDER,PCB	
25		CMD1A530	BRACKET,PCB(A)	
26		CMY1A233	HEAT SINK	
27		COP11718B	PCB,POWER ASSY [E(N)]	
		COP11718C	PCB,POWER ASSY [E(S),UK]	
28	⚠	CLT5P040ZE	TRANS,POWER	
29		COP11718B	PCB,POWER ASSY [E(N)]	
		COP11718C	PCB,POWER ASSY [E(S),UK]	
30		CMD1A531	BRACKET,PCB	
31		COP11767B	PCB,CD ASSY	
32		COP11719B	PCB,MAIN ASSY [E(N)]	
		COP11719C	PCB,MAIN ASSY [E(S),UK]	
33		COP11719B	PCB,MAIN ASSY [E(N)]	
		COP11719C	PCB,MAIN ASSY [E(S),UK]	
34		CNVMB114MA18L	TUNER MODULE(EUR)	
35		COP11718B	PCB,POWER ASSY [E(N)]	
		COP11718C	PCB,POWER ASSY [E(S),UK]	
36		CKF1A282Z	PANEL,REAR [E]	
		CKF1A282Y	PANEL,REAR [UK]	

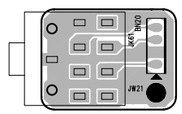
EXPLODED VIEW LIST

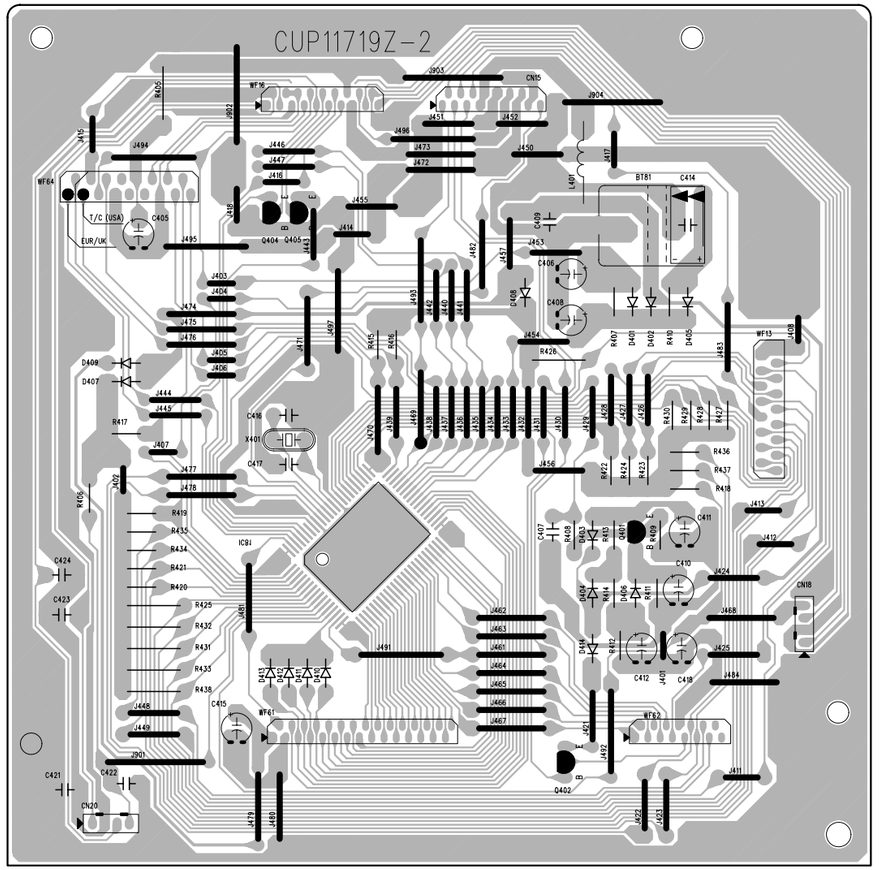
REF.NO.		PARTS NO.	DESCRIPTION	REMARKS
37	⚠	KHR1A028	BUSHING,AC CORD	
38	⚠	CJA2B043ZA	CORD,POWER [E]	
	⚠	CJA2E045ZA	CORD,POWER [UK]	
39		CKC1B156S21	CABINET,TOP [E(N)]	
		CKC1B156S35	CABINET,TOP [E(S),UK]	
40		CGX1A361	SHEET,HIGH	
41		CGX1A362	SHEET,LOW	
42		KMC1A245	SHIELD CUSHION	
F751	⚠	KBA2C2000TLEZ	FUSE	
		KLZ9W001Z	RING,FERRITE	
		CWC1B2A15A080B	CARD CABLE,15P	
		CWC1F1A16A130A	CARD CABLE,16P	
		CWC1C4A17B070B	CARD CABLE,17P	
		CWC1B2A17A100B	CARD CABLE,17P	
		CWC1C4A17B200B	CARD CABLE,17P	
		CWC1B2A19A070B	CARD CABLE,19P	
		CWC1B2A30A080B	CARD CABLE,30P	

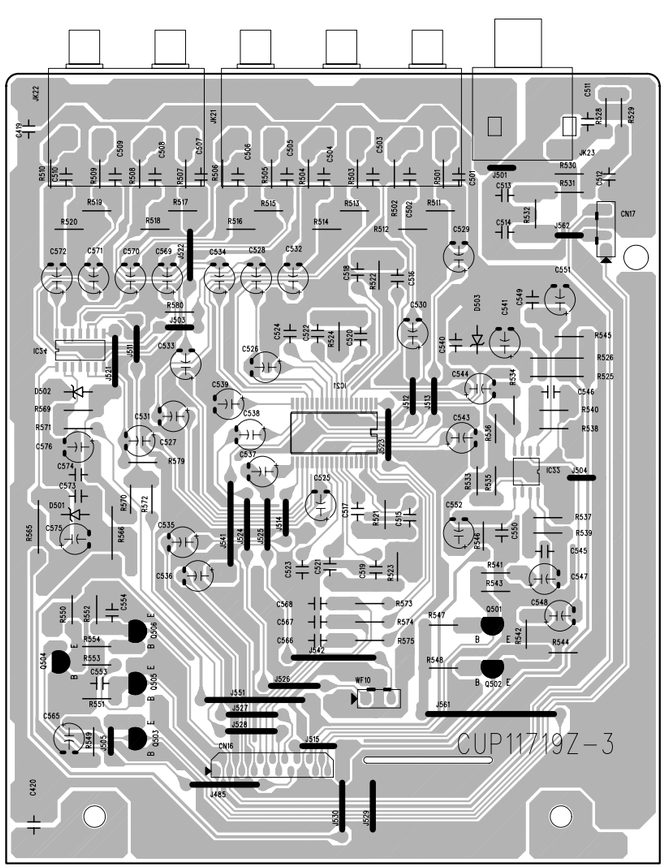
4 PC BOARDS AND PARTS LIST

MAIN PCB

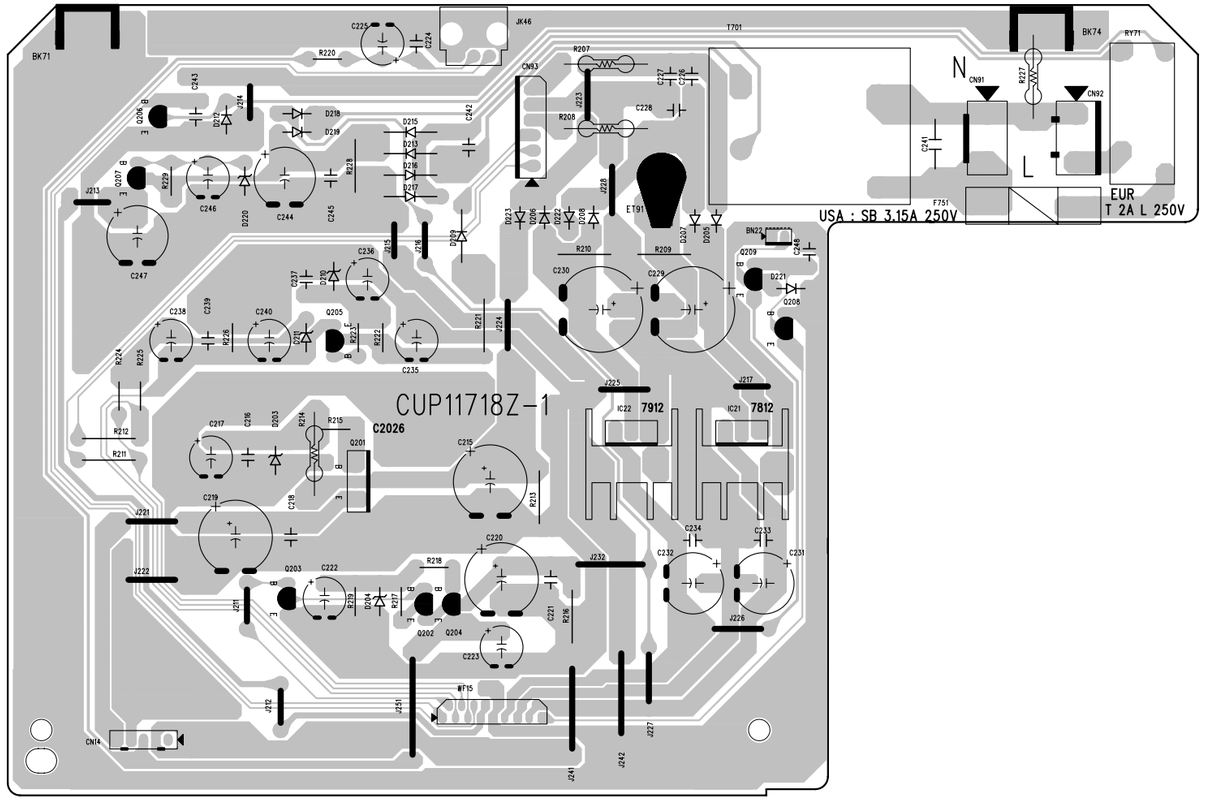








POWER PCB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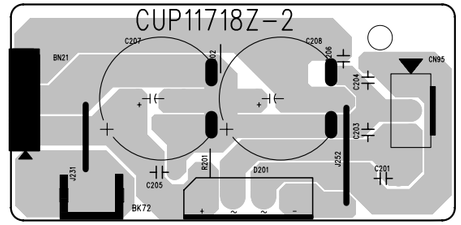
T 2A L 250V
USA : SB 3.15A 250V
F751
ET91
IC22 7912
IC21 7812
CN14


CUP11718Z-2
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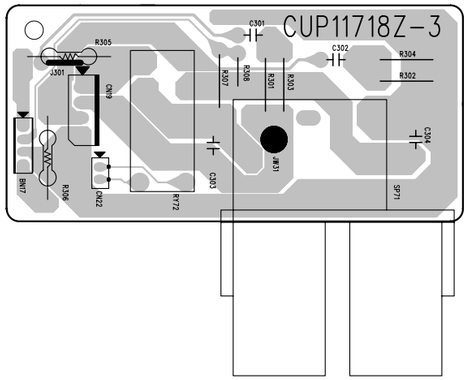
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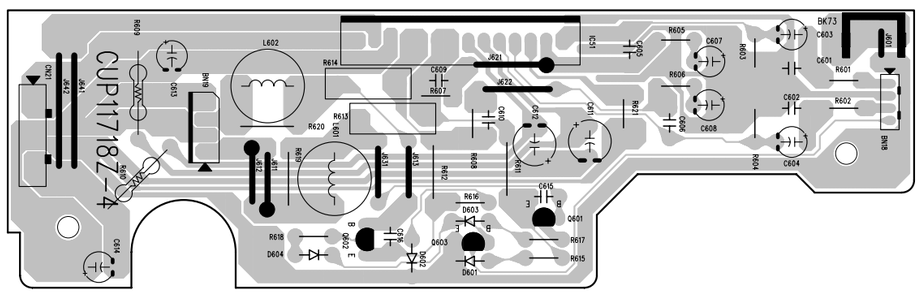
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CD PCB ASSY

REF.NO.		PARTS NO.	DESCRIPTION
		C0P11767B	PCB,CD ASSY
		CUP11767Z	PCB,CD
CN10		KJP05GA19ZM	WAFER,MOLEX53014-0510
CN11		KJP06GA19ZM	WAFER,MOLEX53014-0610
CN12		KJP16GB113ZG	WAFER,16P
CN13		KJP17GB116ZG	WAFER,GF120-17S-LS
D102		HVD1SS133MT	DIODE,1SS133T-77
IC10		HVITC9462F	IC,TC9462F
IC12		HVITA2153FN	IC,TA2153FN
IC13		HVITA2125AF	IC,TA2125AF
IC15	⚠	HVIKA78L05AZT	IC,KA78LXXAZTA
L100		HLQ02C100KT	COIL,AXAIL
Q100		HVTKTA1266YT	TR,KTA1266Y
X101		HOX16934E120C	CRYSTAL,16.934MHZ

MAIN PCB ASSY (GATHER)

REF.NO.	PARTS NO.	DESCRIPTION
	C0P11719B	PCB,MAIN ASSY [E(N)]
	C0P11719C	PCB,MAIN ASSY [E(S),UK]
	CUP11719Y	PCB,MAIN
BK81	CMD1A376	SUPPORT,LED
BK82	CMD1A468	BRACKET,FLT
BK83	CMD1A468	BRACKET,FLT
C414	BCES0HD104	C,GOLD EECS0HD104V
CN15	KJP17GA117ZG	WAFER,GF102-17S-TS
CN16	KJP19GA117ZG	WAFER
CN17	CJP04GA19ZY	WAFER,4P 00906-0027
CN18	CJP04GA19ZY	WAFER,4P 00906-0027
CN20	CJP04GA19ZY	WAFER,4P 00906-0027
CN61	KJP30GB113ZG	WAFER,GF106-30S-LS
CN62	KJP15GB113ZG	WAFER,15P
D401	HVD1SS133MT	DIODE,1SS133T-77
D402	HVD1SS133MT	DIODE,1SS133T-77
D403	HVD1SS133MT	DIODE,1SS133T-77
D404	HVD1SS133MT	DIODE,1SS133T-77
D405	HVD1SS133MT	DIODE,1SS133T-77
D406	HVD1SS133MT	DIODE,1SS133T-77
D407	HVD1SS133MT	DIODE,1SS133T-77
D408	HVD1SS133MT	DIODE,1SS133T-77
D409	HVD1SS133MT	DIODE,1SS133T-77
D411	HVD1SS133MT	DIODE,1SS133T-77
D412	HVD1SS133MT	DIODE,1SS133T-77
D413	HVD1SS133MT	DIODE,1SS133T-77
D414	HVD1SS133MT	DIODE,1SS133T-77
D501	HVDMTZJ4.7BT	DIODE,ZENER MTZJ4.7B
D502	HVDMTZJ4.7BT	DIODE,ZENER MTZJ4.7B
D503	HVDMTZJ9.1BT	DIODE,ZENER MTZJ9.1B

MAIN PCB ASSY (GATHER)

REF.NO.	PARTS NO.	DESCRIPTION
D801	HVD342YCTB7T089	LED,YELLOW SLR342YCTB7
FIP1	HFLHNA11SM28	FIP
IC24	BVI74HC4066D	IC,74HC4066D
IC81	HVITMP87PS71AF	IC,TMP87PS71AF
IC91	HVILC75343M	IC,LC75343M
IC92	HVINJM2068MDTE1	IC,NJM2068MD-TE1
JK21	CJJ4R020W	JACK,BOARD [E(N)]
JK21	CJJ4M046Z	JACK,BOARD [E(S),UK]
JK22	CJJ4P019W	RCA,JACK [E(N)]
JK22	CJJ4P014W	JACK,IN/OUT [E(S),UK]
JK23	CJJ4M056W	JACK,BOARD [E(N)]
JK23	CJJ4R019W	TERMINAL,IN/OUT [E(S),UK]
JK61	HJJ2E021Z	JACK,HEADPHONE [E(N)]
JK61	HJJ2E027Z	JACK,HEADPHONE [E(S),UK]
L401	KLZ9H001Z	BEAD,CORE
Q401	HVTKSB811YT	TR,KSB811Y
Q402	HVTKRA107MT	TR,KRA107M
Q404	HVTKRA107MT	TR,KRA107M
Q405	HVTKRA107MT	TR,KRA107M
Q501	HVTKTD1302T	TR,KTD1302
Q502	HVTKTD1302T	TR,KTD1302
Q503	HVTKRA107MT	TR,KRA107M
Q504	HVTKRA107MT	TR,KRA107M
Q505	HVTKTD1302T	TR,KTD1302
Q506	HVTKTD1302T	TR,KTD1302
RC61	KRVHIM602H32	SENSOR,REMOCON
S801	CST1A012ZT	SW,TACT 00802-0005
S802	CST1A012ZT	SW,TACT 00802-0005
S803	CST1A012ZT	SW,TACT 00802-0005
S804	CST1A012ZT	SW,TACT 00802-0005
S805	CST1A012ZT	SW,TACT 00802-0005
S806	CST1A012ZT	SW,TACT 00802-0005
S807	CST1A012ZT	SW,TACT 00802-0005
S808	CST1A012ZT	SW,TACT 00802-0005
S809	CST1A012ZT	SW,TACT 00802-0005
S810	CST1A012ZT	SW,TACT 00802-0005
S811	CST1A012ZT	SW,TACT 00802-0005
S812	CST1A012ZT	SW,TACT 00802-0005
S813	CST1A012ZT	SW,TACT 00802-0005
S814	CST1A012ZT	SW,TACT 00802-0005
VR61	HSR2A011Z	VR,ENCODER EC16B243040F
WF10	CJP03GA19ZY	WAFER,3P
WF13	KJP17GA115ZG	WAFER,GF120-17S-TS
WF16	KJP17GA117ZG	WAFER,GF102-17S-TS
WF61	KJP30GA117ZG	WAFER,GF102-30S-TS
WF62	KJP15GA117ZG	WAFER,15P
WF64	KJP17GA115ZG	WAFER,GF120-17S-TS
X401	HOX08000E160C	CRYSTAL

POWER PCB ASSY (GATHER)

REF.NO.		PARTS NO.	DESCRIPTION
		COP11718B	PCB,POWER ASSY [E(N)]
		COP11718C	PCB,POWER ASSY [E(S),UK]
		CUP11718Y	PCB,POWER
BK71		CMD1A387	BRACKET,PCB
BK72		CMD1A387	BRACKET,PCB
BK73		CMD1A387	BRACKET,PCB
BK74		CMD1A387	BRACKET,PCB
BN21		KJP06HB60ZY	HOUSING,BMH250
C207	⚠	HCEA1VH332E	C,ELECT 3300UF 35V
C208	⚠	HCEA1VH332E	C,ELECT 3300UF 35V
C215	⚠	HCEA1EH222E	C,ELECT 2200UF 25V
C229	⚠	HCEA1EH222E	C,ELECT 2200UF 25V
C230	⚠	HCEA1EH222E	C,ELECT 2200UF 25V
C241	⚠	KCKDKS472ME	C,CERAMIC 0.0047UF 2.5KV
C244	⚠	HCEA1EH471T	C,ELECT 470UF 25V
CN14		CJP05GA19ZY	WAFER,5P
CN19		CJP04GA01ZY	WAFER,4P
CN21		KJP06GA63ZY	WAFER,BMW250
CN22		CJP02GA19ZY	WAFER,2P CJP02GA19ZY
CN91		KJP02KA060ZY	WAFER
CN92		KJP02GA89ZM	WAFER,MOLEX35328-02
CN93		CJP06GA01ZY	WAFER,6P
CN95		KJP03GA90ZM	WAFER,MOLEX35313-0310
D201	⚠	BVDPBU604F	DIODE,BRIDGE PBU604F
D203		HVDMTZJ9.1BT	DIODE,ZENER MTZJ9.1B
D204		HVDMTZJ6.2BT	DIODE,ZENER MTZJ6.2B
D205	⚠	KVD1N4003SRT	DIODE,1N4003
D206	⚠	KVD1N4003SRT	DIODE,1N4003
D207	⚠	KVD1N4003SRT	DIODE,1N4003
D208	⚠	KVD1N4003SRT	DIODE,1N4003
D209	⚠	KVD1N4003ST	DIODE,1N4003
D210		HVDMTZJ27BT	DIODE,ZENER MTZJ27B
D211		HVDMTZJ9.1BT	DIODE,ZENER MTZJ9.1B
D212		HVD1SS133MT	DIODE,1SS133T-77
D213	⚠	KVD1N4003ST	DIODE,1N4003
D215	⚠	KVD1N4003ST	DIODE,1N4003
D216	⚠	KVD1N4003ST	DIODE,1N4003
D217	⚠	KVD1N4003ST	DIODE,1N4003
D218		HVD1SS133MT	DIODE,1SS133T-77
D219		HVD1SS133MT	DIODE,1SS133T-77
D220		HVDMTZJ6.8BT	DIODE,ZENER MTZJ6.8B
D221		HVD1SS133MT	DIODE,1SS133T-77
D222	⚠	KVD1N4003SRT	DIODE,1N4003
D223	⚠	KVD1N4003SRT	DIODE,1N4003
D601		HVD1SS133MT	DIODE,1SS133T-77
D602		HVD1SS133MT	DIODE,1SS133T-77
D603		HVD1SS133MT	DIODE,1SS133T-77
D604		HVD1SS133MT	DIODE,1SS133T-77
ET91		CNE75	PLATE,EARTH
F751		KJCFC5S	HOLDER,FUSE

POWER PCB ASSY (GATHER)

REF.NO.		PARTS NO.	DESCRIPTION
IC21		CMY1A025	HEAT SINK
IC21	⚠	HVINJM7812FA	IC,NJM7812FA
IC22		CMY1A025	HEAT SINK
IC22	⚠	HVINJM7912FA	IC,NJM7912FA
IC51		BVISTK442-050	IC,STK442-050
JK46		HJSTOTX179L	MODULE,OPTICAL TOTX179L
L601		CLEY0R5KAK	COIL,SPEAKER 0.5UH K
L602		CLEY0R5KAK	COIL,SPEAKER 0.5UH K
Q201		CMY1A025	HEAT SINK
Q201	⚠	HVTKTC2026Y	TR,KTC2026Y
Q202		HVTKRA107MT	TR,KRA107M
Q203		HVTKRC107MT	TR,KRC107M
Q204	⚠	HVTKTC2026Y	TR,KTC2026Y
Q205	⚠	HVTKTA1271YT	TR,KTA1271Y
Q206		HVTKRC107MT	TR,KRC107M
Q207	⚠	HVTKSC2316YT	TR,KSC2316Y
Q208		HVTKRA107MT	TR,KRA107M
Q209		HVTKRC107MT	TR,KRC107M
Q601		KVTKSA1175YT	TR,KSA1175Y
Q602		KVTKSA1175YT	TR,KSA1175Y
Q603		HVTKRC107MT	TR,KRC107M
R207	⚠	KRQ1AJR47H	R,FUSE 0.47 OHM 1W J
R208	⚠	KRQ1AJR47H	R,FUSE 0.47 OHM 1W J
R211	⚠	CRG1ANJ150H	R,METAL 15 OHM 1W J
R212	⚠	CRG1ANJ150H	R,METAL 15 OHM 1W J
R214	⚠	CRG1ANJ331H	R,METAL 330 OHM 1W J
R305	⚠	CRG1ANJ391H	R,METAL 390 OHM 1W J
R306	⚠	CRG1ANJ391H	R,METAL 390 OHM 1W J
R609	⚠	CRG1ANJ101H	R,METAL 100 OHM 1W J
R610	⚠	CRG1ANJ101H	R,METAL 100 OHM 1W J
R613	⚠	CRF5EKR22H	R,CEMENT 0.22 OHM 5W K
R614	⚠	CRF5EKR22H	R,CEMENT 0.22 OHM 5W K
RY71	⚠	HSL1A008ZE	RELAY,SDT-S-112DMR
RY72		HSL4A004ZU	RELAY,OSA-SS-212DM3
SP71		CJJ5P012Z	TERMINAL,SPEAKER
T701	⚠	CLT51003ZE	TRANS,SUB
WF15		KJP17GA117ZG	WAFER,GF102-17S-TS

5 INCLUDED ACCESSORIES

INCLUDED ACCESSORIES

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
	CQX1A938Z	OWNER'S MANUAL [E]	
	CQX1A940Z	OWNER'S MANUAL [E]	
	CQX1A961Z	OWNER'S MANUAL [UK]	
	CARTCRH220	REMOCON TRANSMITTER ASSY	
	HABAAM1.5V	BATTERY	
	CSA1A018Z	FM 1 POLE ANT	
	CSA1A020Z	AM LOOP ANT	